## Exercise - I (Conceptual Questions) Build Up Your Understanding

**1.** Ecosystem term coined by :-
(1) Odum (2) Mishra
(3) Reiter (4) Tansley

**2.** Which one is not a functional aspect of ecosystem?
(1) Energy flow (2) Productivity
(3) Decomposition (4) Stratification

**3.** The maximum energy is stored at which of the following trophic level in any ecosystem
(1) Producers (2) Herbivores
(3) Carnivores (4) Top carnivores

**4.** The source of energy in an ecosystem is :-
(1) Sunlight (2) DNA
(3) ATP (4) RNA

**5.** Ecosystem may be defined as :-
(1) A localized association of several plants and animals
(2) Different communities of plants, animals and microbes together with their physico-chemical environment.
(3) Different communities of plants microbes plus their physico-chemical environment
(4) None of the above

**6.** The importance of ecosystem lies in :-
(1) Flow of energy
(2) Cycling of materials
(3) Both the above
(4) None of the above

**7.** Ecosystem is :-
(1) Any functional unit that includes the whole community in a given area interacting with the abiotic factors
(2) A group of green plants
(3) A group of animals interacting with environment
(4) Man and pets living together

**8.** Who proposed that ecosystem is symbol of structure & function of nature :-
(1) Gardner (2) Odum
(3) Tansley (4) Reiter

**9.** Largest ecosystem of the world are: -
(1) Forests (2) Grass lands
(3) Great lakes (4) Oceans

**10.** Which of the following is a manmade artificial ecosystem?
(1) Grassland ecosystem
(2) Forest ecosystem
(3) Ecosystem of artificial lakes & dams
(4) None of these

**11.** Nepenthes (Insectivorous pitcher plant) is:-
(1) Producer (2) Consumer
(3) Both (1) & (2) (4) None of these

**12.** Which one is omnivorous?
(1) Cow (2) Lion
(3) Deer (4) Man

**13.** Which biotic components mainly help in recycling of minerals?
(1) Producers (2) Consumers
(3) Decomposers (4) All the above

**14.** Trophic levels are formed by :-
(1) Only plants
(2) Only carnivores
(3) Only animals
(4) Organisms linked in food chain

**15.** In a forest ecosystem green plants are :-
(1) Primary producers
(2) Consumers
(3) Primary consumers
(4) Decomposers

**16.** In an ecosystem the function of the producers is to :-
(1) Convert organic compounds into inorganic compounds
(2) Trap solar energy and convert it into chemical energy
(3) Utilize chemical energy
(4) Release energy

**17.** With regard to ecological food chain, man is a :-
(1) Consumer
(2) Producer
(3) Both consumer & producer
(4) Decomposer

**18.** A plant, being eaten by a herbivore which in turn is eaten by a carnivore makes :-
(1) Food chain (2) Web of Food
(3) Omnivores (4) Interdependence

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**19.** When peacock, eats snake which eats insects depends on green plants, the peacock is?
(1) A primary consumer
(2) A primary decomposer
(3) A final decomposer of plants
(4) The apex of the food pyramid

**20.** If we completely remove decomposers from an ecosystem, the ecosystem functioning will be adversely affected because: -
(1) Mineral movement will be blocked
(2) Herbivores will not receive solar energy
(3) Energy flow will be blocked
(4) Rate of decomposition of other components will be very high

**21.** Path of energy flow in an ecosystem is :-
(1) Herbivorous→producer → carnivorous → decomposer
(2) Herbivorous→carnivorous → producer → decomposer
(3) Producer→ carnivorous → herbivorous → decomposer
(4) Producer→ herbivorous → carnivorous → decomposer

**22.** Pyramids of energy are :-
(1) Always upright (2) Always Inverted
(3) Mostly upright (4) Mostly inverted

**23.** The ecological pyramid of numbers in pond ecosystem is :-
(1) Upright
(2) Inverted
(3) May upright or Inverted
(4) First upright then inverted

**24.** An ecosystem resists change because it is in a state of :-
(1) Homoeostasis
(2) Regular Illumination
(3) Static Imbalance
(4) Food accumulation

**25.** What is true about any ecosystem?
(1) It is self-regulatory
(2) It is self-sustained
(3) Top carnivores have climax trophic level position
(4) All

**26.** The Pyramid of numbers in grassland ecosystem will be :-
(1) Upright (2) Inverted
(3) Irregular (4) Linear

**27.** Which ecosystem has maximum number of producers in an unit area?
(1) Pond (2) Grassland
(3) Forest (4) Tundra

**28.** The storage of energy at consumer level is known as :-
(1) Grass primary production
(2) Secondary productivity
(3) Net primary productivity
(4) Net productivity

**29.** Gross primary productivity is :-
(1) Rate at which organic molecules are formed in an autotroph
(2) Rate at which organic molecules are used up by an autotroph
(3) Storage of organic molecules in the body of an autotroph
(4) Rate at which organic molecules are transferred to next higher trophic level

**30.** Carbon cycle includes (the following is a logical sequence) :-
(1) Producer – consumer – decomposer
(2) Decomposer – consumer – producer
(3) Producer – decomposer – consumer
(4) Consumer – producer – decomposer

**31.** The flow of materials from non-living components to living components and back to the non-living components in a more or less cyclic manner is called a :-
(1) Gaseous cycle
(2) Sedimentary cycle
(3) Biogeochemical cycle
(4) Hydrologic cycle

**32.** A group of interconnected food chains is called: -
(1) Pyramid of energy
(2) Food web
(3) Food cycle
(4) Complex food chain

**33.** Which of these is the food chain which runs from larger to smaller organisms?
(1) Grazing food chain
(2) Saprotrophic food chain
(3) Predatory food chain
(4) Parasitic food chain

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**34.** A food chain starts from: -
(1) Nitrogen fixing organisms
(2) Photosynthetic organisms
(3) Respiration
(4) Decomposers

**35.** The functional unit of nature is called: -
(1) Community (2) Ecosystem
(3) Population (4) Succession

**36.** Primary productivity of plants in an ecosystem depends on :-
(1) A variety of environmental factors
(2) Availability of nutrients
(3) Photosynthetic capacity of plants
(4) All of the above

**37.** The annual net primary productivity of land is about :-
(1) 170 billion tons (2) 70 billion tons
(3) 55 billion tons (4) 115 billion tons

**38.** Which of the following is included in detritus?
(1) Fragmentation (2) Leaching
(3) Catabolism (4) All of the above

**39.** Decomposition rate is slow if detritus is rich in :-
(1) Nitrogen (2) Humus
(3) Sugars (4) Lignin and Chitin

**40.** Match the columns I, II and III, and choose the correct combination from the options given :-

| column I | | Column II | | Column III | |
|---|---|---|---|---|---|
| a. | $1^0$ Producer | 1. | $T_1$ | K. | Grasshopper |
| b. | $1^0$ consumer | 2. | $T_2$ | L. | Wolf |
| c. | $3^0$ Consumer | 3. | $T_3$ | M. | Pytoplankton |
| d. | $3^0$ consumer | 4. | $T_4$ | N. | Phytoplankton |

(1) a - 1 - K, b - 2 - L, c - 3 - M, d - 4 - N
(2) a - 1 - N, b - 2 - M, c - 3 - K, d - 4 - L
(3) a - 1 - N, b - 2 - K, c - 3 - L, d - 4 - M
(4) a - 2 - N, b - 3 - K, c - 4 - L, d - 1 - M

**41.** A plant receives $10^6$ J of sunlight energy. The energy reached at the tertiary consumer will be: -
(1) 1000 J (2) 100 J
(3) 10 J (4) 1 J

**42.** An inverted pyramid of biomass can be found in which ecosystem: -
(1) Forest (2) Pond
(3) Grass land (4) Tundra

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**43.** In an ecosystem :
(1) Primary producers are more than primary consumers
(2) Primary consumers are larger than primary producers
(3) Secondary consumers are larger than primary producers
(4) Primary consumers are least depend on primary producers

**44.** Ecosystem term coined by -
(1) Odum (2) Mishra
(3) Reiter (4) Tansley

**45.** Large ecosystems are called -
(1) Biomes (2) Ecotone
(3) Ecads (4) Biocoenosis

**46.** Which one is not a functional aspect of ecosytem ?
(1) Energy flow (2) Productivity
(3) Decomposition (4) Stratification

**47.** Vultures in an ecosystem are -
(1) Predators (2) Scavangers
(3) Consumers (4) Top carnivores

**48.** The maximum energy is stored at which of the following trophic level in any ecosystem -
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**55.** Which of the following is a man made artificial ecosystem
(1) Grassland ecosystem
(2) Forest ecosystem
(3) Ecosystem of artificial lakes & dams
(4) None of these

**56.** A pond is a :-
(1) Biome
(2) Natural ecosystem
(3) Artificial ecosystem
(4) Community of plants & animals

**57.** Which one is omnivorous -
(1) Frog (2) Lion
(3) Deer (4) Man

**58.** The Pyramid of numbers in grassland ecosystem will be -
(1) Upright (2) Inverted
(3) Irregular (4) Linear

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**62.** Carbon cycle includes (the following is a logical sequence) -
(1) Producer – consumer – decomposer
(2) Decomposer – consumer – producer
(3) Producer – decomposer – consumer
(4) Consumer – producer – decomposer

**63.** The bulk of nitrogen in nature is fixed by -
(1) Lighting
(2) Chemical industries
(3) Denitrifying bacteria
(4) Symbiotic bacteria

**64.** The flow of materials from non-living components to living components and back to the non-living components in a more or less cyclic manner is called a-
(1) Gaseous cycle
(2) Sedimentary cycle
(3) Biogeochemical cycle
(4) Hydrologic cycle

**65.** Which is best for plant growth -
(1) Loamy soil (2) Silt
(3) Sandy soil (4) Clay soil

**66.** The least porous soil among the following -
(1) Loamy soil (2) Clay soil
(3) Sandy soil (4) Peaty soil

**67.** The science dealing with soil is called -
(1) Pedology (2) Acarology
(3) Geology (4) Paleontology

**68.** A good soil is that which -
(1) holds whole of the water entering into it
(2) Allows limited amount of water into it
(3) Allows the water to percolate slowly into it
(4) Allows the water to pass very quickly from it

**69.** The soil near the surface is usually darker then the soil about one meter down. This is because the top soil is
(1) Young & wet
(2) Richer in organic matter
(3) Richer in Ca & Mg
(4) Dry

**70.** A soil is said to be fertile when
(1) It is rich in organic matter
(2) It has capacity to hold water
(3) It has a capacity to hold nutrients
(4) It holds water & all essential nutrients in a definite proportion

**71.** What is the best pH of the soil for cultivation of plants:-
(1) 3.4 – 5.4 (2) 6.5 – 7.5
(3) 4.5 – 8.5 (4) 5.5 – 6.5

**72.** Forests near equator region are called -
(1) Deciduous
(2) Tropical rain forests
(3) Coniferous forests
(4) Temperate forests

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**73.** All the living organisms and non-living factors of the earth constitute -
(1) Biosphere (2) Community
(3) Biome (4) Association

**74.** The term biosphere is used for the zone of the earth where life exists -
(1) On the lithospere
(2) In the hydrosphere
(3) In the lithosphere and hydrosphere
(4) In the lithosphere, hydrosphere and atmosphere

**75.** Grass lands with scattered trees are called -
(1) Pampas (2) Stepps
(3) Prairies (4) Savanna

**76.** Temperate evergreen forests in India found in-
(1) Himalaya (2) W. Bengal
(3) Andman (4) Rajasthan

**77.** Which biome refers to arctic desert -
(1) Tundra (2) Taiga
(3) Savannah (4) Thar desert

**78.** Which biome is most rich in fauna and flora -
(1) Deciduous forests
(2) Chaparral
(3) Tropical rain forests
(4) Taiga

**79.** Autumn colouration of leaves appear only in-
(1) Tropical regions
(2) evergreen plants
(3) temperate deciduous plants
(4) deserts

**80.** Veldts of Africa & Pampas of south America are -
(1) Rain forest biomes
(2) Chaparral biomes
(3) Temperate biomes
(4) Grassland biomes

**81.** Savannahs are :
(1) Tropical rain forest
(2) Desert
(3) Grassland with scattered trees
(4) Dense forest with close canopy

**82.** A biosphere is composed of
(1) Living organisms
(2) Living organisms + Lithosphere
(3) Living organisms + lithosphere + atmosphere
(4) Living organisms + lithosphere + atmosphere + hydrosphere

## EXERCISE-I (Conceptual Questions) ANSWER KEY

| Question | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Answer | 4 | 4 | 1 | 1 | 2 | 3 | 1 | 3 | 4 | 3 | 3 | 4 | 3 | 4 | 1 |
| Question | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| Answer | 2 | 1 | 1 | 4 | 1 | 4 | 1 | 1 | 1 | 4 | 1 | 1 | 2 | 1 | 1 |
| Question | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 |
| Answer | 3 | 2 | 4 | 2 | 2 | 4 | 4 | 3 | 4 | 3 | 3 | 2 | 1 | 4 | 1 |
| Question | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| Answer | 4 | 2 | 1 | 1 | 2 | 3 | 1 | 3 | 4 | 3 | 2 | 4 | 1 | 1 | 2 |
| Question | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 |
| Answer | 1 | 1 | 4 | 3 | 1 | 2 | 1 | 3 | 2 | 4 | 4 | 2 | 1 | 4 | 4 |
| Question | 76 | 77 | 78 | 79 | 80 | 81 | 82 | | | | | | | | |
| Answer | 1 | 1 | 3 | 3 | 4 | 3 | 4 | | | | | | | | |

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## Exercise - II (Previous Year Questions) AIPMT/NEET

### AIPMT 2006

**1.** Which one of the following is *not* used for construction of ecological pyramids?
(1) Rate of energy flow
(2) Fresh weight
(3) Dry weight
(4) Number of individuals

### AIPMT 2007

**2.** Which one of the following ecosystem types has the highest annual net primary productivity?
(1) Temperate deciduous forest
(2) Tropical rain forest
(3) Tropical deciduous forest
(4) Temperate evergreen forest

### AIPMT 2008

**3.** Consider the following statements concerning food chains :-
(a) Removal of 80% tigers from an area resulted in greatly increased growth of vegetation
(b) Removal of most of the carnivores resulted in an increased population of deers
(c) The length of food chains is generally limited to 3-4 trophic levels due to energy loss.
(d) The length of food chains may very from 2 to 8 trophic levels.
Which two of the above statements are correct?
(1) a, d (2) a, b
(3) b, c (4) c, d

### AIPMT 2009

**4.** Which one of the following types of organisms occupy more than one trophic level in a
pond ecosystem?
(1) Frog (2) Phytoplankton
(3) Fish (4) Zooplankton

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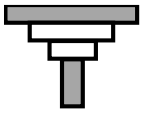
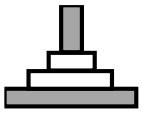
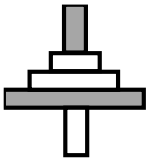
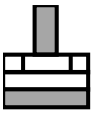
### AIPMT 2010

**5.** The biomass available for consumption by the herbivores and the decomposers is called :-
(1) Gross primary productivity
(2) Net primary productivity
(3) Secondary productivity
(4) Standing crop

**6.** Which of the following representations shows the pyramid of numbers in a forest ecosystem: -

(A) 
(B) 
(C) 
(D) 

(1) A (2) B (3) C (4) D

### AIPMT 2011

**7.** Mass of living matter at a trophic level in an area at any time is called: -
(1) Standing crop (2) Detritus
(3) Humus (4) Standing state

**8.** Of the total incident solar radiation, the proportion of PAR is: -
(1) About 70% (2) About 60%
(3) Less than 50% (4) More than 80%

**9.** Which one of the following statements is correct for secondary succession?
(1) It begins on a bare rock
(2) It occurs on a deforested site
(3) It follows primary succession
(4) It is similar to primary succession expect that it has a relatively fast pace.

**10.** Which one of the following statements for pyramid of energy is incorrect, whereas the remaining three are correct?
(1) Its base is broad
(2) It shows energy content of different trophic level organisms
(3) It is inverted in shape
(4) It is upright in shape

**11.** Which one of the following animals may occupy more than one trophic level in the same ecosystem at the same time?
(1) Frog (2) Sparrow
(3) Lion (4) Goat

**12.** The breakdown of detritus into smaller particles by earthworm is a process called :-
(1) Catabolism (2) Humification
(3) Fragmentation (4) Mineralisation

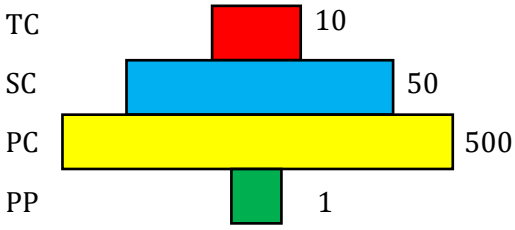
## AIPMT 2012

**13.** Which one of the following is not a functional unit of an ecosystem :-
(1) Productivity (2) Stratification
(3) Energy flow (4) Decomposition

**14.** The upright pyramid of number is absent in
(1) Lake (2) Grassland
(3) Pond (4) Forest

**15.** Which one of the following is not a gaseous biogeochemical cycle in ecosystem?
(1) Nitrogen cycle (2) Carbon cycle
(3) Sulphur cycle (4) Phosphorus cycle

**16.** Given below is an imaginary pyramid of numbers. What could be one of the possibilities about certain organisms at some of the different levels?

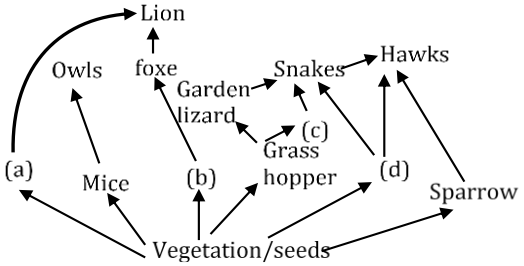



(1) Level one PP is "Pipal trees" and the level SC is "sheep"
(2) Level PC is "rats" and level SC is "cats"
(3) Level PC is "insects" and level SC is "small insectivorous birds
(4) Level PP is "Phytoplanktons" in sea and "Whale" on top level TC.

**17.** Identify the possible link "A" in the following food chain :-
Plant → Insect → Frog → "A" → Eagle
(1) Cobra (2) Parrot
(3) Rabbit (4) Wolf

**18.** The second stage of hydrosere is occupied by plants like :-
(1) *Salix* (2) *Vallisneria*
(3) *Azolla* (4) *Typha*

**19.** Identify the likely organisms (a), (b), (c) and (d) in the food web shown below :-




**Options :**

| | (a) | (b) | (c) | (d) |
|---|---|---|---|---|
| (1) | *rat* | *dog* | *tortoise* | *crow* |
| (2) | *squirrel* | *cat* | *rat* | *pigeon* |
| (3) | *deer* | *rabbit* | *frog* | *rat* |
| (4) | *dog* | *squirrel* | *bat* | *deer* |

**20.** The rate of formation of new organic matter by rabbit in a grassland, is called :-
(1) Net primary productivity
(2) Gross primary productivity
(3) Net productivity
(4) Secondary productivity

## NEET-UG 2013

**21.** Secondary productivity is rate of formation of new organic matter by :-
(1) Decomposer (2) Producer
(3) Parasite (4) Consumer

**22.** Which one of the following processes during decomposition is correctly described?
(1) Leaching — Water soluble inorganic nutrients rise to the top layers of soil
(2) Fragmentation — Carried out by organisms such as earthworm
(3) Humification — Leads to the accumulation of a dark coloured substance humus which undergoes microbial action at a very fast rate
(4) Catabolism — Last step in the decomposition under fully anaerobic condition

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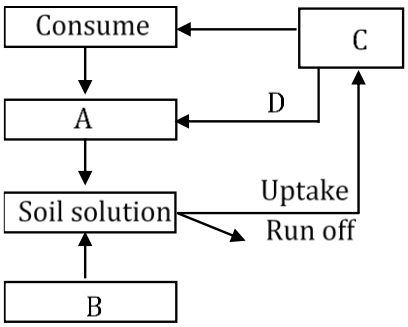
## AIPMT 2014

**23.** Given below is a simplified model of phosphorus cycling in a terrestrial ecosystem with four blanks (A-D). Identify the blanks :-




**Options :**

| | A | B | C | D |
|---|---|---|---|---|
| (1) | Rock minerals | Detritus | Litter fall | Producers |
| (2) | Litter fall | Producers | Rock minerals | Detritus |
| (3) | Detritus | Rock minerals | Producer | Litter fall |
| (4) | Producers | Litter fall | Rock minerals | Detritus |

**24.** If 20 J of energy is trapped at producer level, then how much energy will be available to peacock as food in the following chain?

plant → mice → snake → peacock

(1) 0.02 J (2) 0.002 J

(3) 0.2 J (4) 0.0002 J

## AIPMT 2015

**25.** The mass of living material at a trophic level at a particular time is called :-

(1) Standing state

(2) Net primary productivity

(3) Standing crop

(4) Gross primary productivity

**26.** In an ecosystem the rate of production of organic matter during photosynthesis is termed as :-

(1) Gross primary productivity

(2) Secondary productivity

(3) Net productivity

(4) Net primary productivity

**27.** Secondary Succession takes place on/in :-

(1) Degraded forest

(2) Newly created pond

(3) Newly cooled lava

(4) Bare rock

**28.** In which of the following both pairs have corrected combination?

| | | |
|---|---|---|
| (1) | Gaseous nutrient cycle | Sulphur and Phosphorus |
| | Sedimentary nutrient cycle | Carbon and Nitrogen |
| (2) | Gaseous nutrient cycle | Carbon and Nitrogen |
| | Sedimentary nutrient cycle | Sulphur and Phosphorus |
| (3) | Gaseous nutrient cycle | Carbon and Sulphur |
| | Sedimentary nutrient cycle | Nitrogen and Phosphorus |
| (4) | Gaseous nutrient cycle | Nitrogen and Sulphur |
| | Sedimentary nutrient cycle | Carbon and Phosphorus |

**29.** During ecological succession :-

(1) The changes lead to a community that is in near equilibrium with the environment and is called pioneer community

(2) The gradual and predictable change in species composition occurs in a given area

(3) The establishment of a new biotic community is very fast in its primary phase

(4) The numbers and types of animals remain constant

## NEET-I 2016

**30.** The term ecosystem was coined by :-

(1) E. P. Odum (2) A. G. Tansley

(3) E. Haeckel (4) E. Warming

## NEET-II 2016

**31.** The primary producers of the deep-sea hydrothermal vent ecosystem are :-

(1) Blue-green algae (2) Coral reefs

(3) Green algae (4) Chemosynthetic bacteria

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**NEET-UG 2017**

**32.** Which ecosystem has the maximum biomass?
(1) Grassland ecosystem
(2) Pond ecosystem
(3) Lake ecosystem
(4) Forest ecosystem

**33.** The sequential events from initial stage till climax stage in a succession are called :-
(1) Ecesis (2) Sere
(3) Nudation (4) Migration

**NEET-UG 2019**

**34.** Which of the following ecological pyramids is generally inverted?
(1) Pyramid of numbers in grassland
(2) Pyramid of energy
(3) Pyramid of biomass in a forest
(4) Pyramid of biomass in a sea

**35.** Which of the following statements is incorrect?
(1) Biomass decreases from first to fourth trophic level
(2) Energy content gradually increases from first to fourth trophic level
(3) Number of individuals decreases from first trophic level to fourth trophic level
(4) Energy content gradually decreases from first to fourth trophic level

**36.** The rate decomposition is faster in the ecosystem due to following factors EXCEPT
(1) Detritus rich in sugars
(2) Warm and moist environment
(3) Presence of aerobic soil microbes
(4) Detritus richer in lignin and chitin

**NEET-UG 2020**

**37.** In relation of Gross primary productivity and Net primary productivity of an ecosystem, which one of the following statements is correct?
(1) There is no relationship between Gross primary productivity and Net primary productivity.
(2) Gross primary productivity is always less than net primary productivity.
(3) Gross primary productivity is always more than net primary productivity.
(4) Gross primary productivity and Net primary productivity are one and same.

**NEET-UG 2021**

**38.** The amount of nutrients, such as carbon, nitrogen, phosphorus and calcium present in the soil at any given time, is referred as :-
(1) Climax
(2) Climax community
(3) Standing state
(4) Standing crop

**39.** Which of the following statements is not correct?
(1) Pyramid of biomass in sea is generally inverted.
(2) Pyramid of biomass in sea is generally upright.
(3) Pyramid of energy is always upright.
(4) Pyramid of numbers in a grassland ecosystem is upright.

**40.** In the equation GPP - R = NPP
R represents :-
(1) Radiant energy
(2) Retardation factor
(3) Environment factor
(4) Respiration losses

**NEET-UG 2022**

**41.** The amount of biomass or organic matter produced per unit area over a time period by plants during photosynthesis is called:
(1) Secondary production
(2) Primary production
(3) Gross primary production
(4) Net primary production

**42.** Which one of the following will accelerate phosphorus cycle?
(1) Volcanic activity
(2) Weathering of rocks
(3) Rain fall and storms
(4) Burning of fossil fuels

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**43.** Match the List-I with List-II

| List-I | | List-II | |
|---|---|---|---|
| (a) | Carbon dissolved in oceans | (i) | 55 billion tons |
| (b) | Annual fixation of carbon through photosynthesis | (ii) | 71% |
| (c) | PAR captured by plants | (iii) | $4\times10^{13}$ kg |
| (d) | Productivity of oceans | (iv) | 2 to 10% |

Choose the correct answer from the options given below:

(1) (a) - (ii), (b) - (iv), (c) - (iii), (d) - (i)

(2) (a) - (iii), (b) - (iv), (c) - (ii), (d) - (i)

(3) (a) - (ii), (b) - (iii), (c) - (iv), (d) - (i)

(4) (a) - (iii), (b) - (ii), (c) - (i), (d) - (iv)

## EXERCISE-II (Previous Year Questions) ANSWER KEY

| Question | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Answer | 2 | 2 | 3 | 3 | 2 | 2 | 1 | 3 | 2 | 3 | 2 | 3 | 2 | 4 | 4 |
| Question | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| Answer | 3 | 1 | 2 | 3 | 4 | 4 | 2 | 3 | 1 | 3 | 1 | 1 | 2 | 2 | 2 |
| Question | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | | |
| Answer | 4 | 4 | 2 | 4 | 2 | 4 | 3 | 3 | 2 | 4 | 2 | 2 | 3 | | |

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# Exercise - III Master Your Understanding

## EXERCISE-III (A) NCERT BASED QUESTIONS

**1.** Adaptation to low temperature and freezing in animals occurs due to the production of :-
(1) Antifreeze proteins
(2) Chaperonins
(3) Proline
(4) Analine

**2.** Which one of the following has the largest population in a food chain ?
(1) Producers
(2) Primary consumers
(3) Secondary consumers
(4) Decomposers

**3.** The second trophic level in a lake is :-
(1) Phytoplankons
(2) Zooplanktons
(3) Benthos
(4) Fishes

**4.** Secondary producers are :-
(1) Herbivores
(2) Producers
(3) Carnivores
(4) None of the above

**5.** What is the percentage of photosynthetically active radiation (PAR) in the incident solar radiations ?
(1) 100 % (2) 50 %
(3) 1–5 % (4) 2 – 10 %

**6.** Which of the following is an abiotic components of the ecosystem ?
(1) Bacteria (2) Humus
(3) Plants (4) Fungi

**7.** Which of the following processes helps in Nutrient conservation ?
(1) Mineralisation
(2) Immobilisation
(3) Leaching
(4) Nitrification

**8.** Which of the following represents the sedimentary type of nutrient cycle ?
(1) Sulphur (2) Phosphorus
(3) Nitrogen (4) Oxigen

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**9.** Photosynthetically active radiation (PAR) represents the following range of wave length.
(1) 400 – 700 nm (2) 500 – 600 nm
(3) 450 – 950 nm (4) 340 – 450 nm

**10.** Soil erosion can be prevented by :-
(1) Overgrazing
(2) Removal of vegetation
(3) Afforestation
(4) Deforestation

**11.** Mild grazing in grassland by herbivores :-
(1) Retards growth of grasses
(2) Arrest growth of grasses
(3) Stimulatis growth of grasses
(4) Destroy Vegetation

**12.** Deforestation generally decreases :-
(1) Rain fall (2) Soil erosion
(3) Drought (4) Global warming

**13.** Forest area in india is about :-
(1) 9% of geographical area
(2) 19% of geographical area
(3) 29% of geographical area
(4) 37% of geographical area

## EXERCISE-III (B) (ANALYTICAL QUESTIONS)

**14.** ***Acacia***, ***Prosopis*** and ***Caparis*** belongs to :-
(1) Deciduous forest
(2) Tropical forest
(3) Thorn forest
(4) Evergeen forest

**15.** Total amount of energy trapped by green plants in food is called :-
(1) Gross primary production
(2) Net primary production
(3) Standing crop
(4) Standing state

**16.** Bacteria are essential in carbon cycle as :-
(1) Decomposer (2) Synthesizer
(3) Consumer (4) Pri. Producer

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**17.** In which biome a new plant may adapt soon:-
(1) Tropical rain forest
(2) Desert
(3) Mangrove
(4) Sea island

**18.** Concentration of DDT is highest in :-
(1) Primary consumer
(2) Producers
(3) Top consumer
(4) Decomposers

**19.** Percentage energy transferred to higher trophic level in food chain is :-
(1) 1% (2) 10%
(3) 90% (4) 100%

**20.** Biotic and abiotic components form :-
(1) Community (2) Ecosystem
(3) Population (4) Species

**21.** Species diversity is maximum in :-
(1) Tropical rain forest.
(2) Temperate forest.
(3) Deserts
(4) Hill slops

**22.** Insectivorous plants grow in the soil which is deficient in :-
(1) Mg (2) Ca
(3) P (4) N

**23.** Which one of the following is correct matching of a plant, its habit and the forest type where it normally occurs ?
(1) ***Prosopis***, tree, scrub
(2) ***Saccharum***, grass, forest
(3) ***Shorea robusta***, herb, tropical rain forest
(4) ***Acacia catechu***, tree, coniferous forest

**24.** Which is the reason for highest biomass in aquatic ecosystem-
(1) Nano plankton, blue green algae, green algae
(2) Sea grass, and slime molds
(3) Benthonic and brown algae
(4) Diatoms

**25.** Pneumatophores are found in-
(1) The vegetation which is found in marshy and saline lake
(2) The vegetation which found in saline soil
(3) Xerophytes
(4) Epiphytes

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**26.** In which of the following plant sunken stomata are found :-
(1) *Nerium*
(2) Hydrilla
(3) Mango
(4) Guava

**27.** In 1984, the Bhopal gas tragedy took place because methyl isocyanate :-
(1) Reacted with ammonia
(2) Reacted with $CO_2$
(3) Reacted with water
(4) Reacted with DDT

**28.** An ecosystem which can be easily damaged but can recover after some time if damaging effect stops will having :-
(1) High stability and low resilience
(2) Low stability and low resilience
(3) High stability and high resilience
(4) Low stability and high resilience

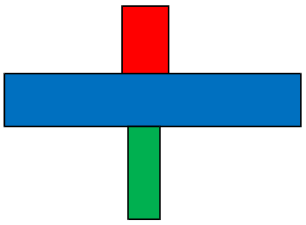
**29.** In which one of the following habitats does the diurnal temperature of soil surface vary most ?
(1) Forest
(2) Desert
(3) Grassland
(4) Shrub land

**30.** Identify the correctly matched pair –
(1) Kyoto Protocol – Climatic change
(2) Montreal Protocol – Global warming
(3) Basal Convention – Biodiversity Conservation
(4) Ramsar Convention – Ground water pollution

**31.** Biodiversity Act of India was passed by the Parliament in the year –
(1) 2002 (2) 1992
(3) 1996 (4) 2000

**32.** Which of the following is **not** true for a species?
(1) Members of a species can interbreed
(2) Gene flow does not occur between the populations of a species
(3) Each species is reproductively isolated from every other species
(4) Variations occur among members of a species

**33.** Given below is one of the types of ecological pyramids. This type represents



(1) Pyramid of numbers in a grassland

(2) Pyramid of biomass in a fallow land

(3) Pyramid of biomass in a lake

(4) Energy pyramid in a spring

## EXERCISE - III ANSWER KEY

| Question | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Answer | 1 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 3 | 3 | 1 | 2 | 3 | 1 |
| Question | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| Answer | 1 | 1 | 3 | 2 | 2 | 1 | 4 | 1 | 3 | 1 | 1 | 3 | 4 | 2 | 1 |
| Question | 31 | 32 | 33 | | | | | | | | | | | | |
| Answer | 1 | 2 | 3 | | | | | | | | | | | | |